

**Water Resources Board Meeting
February 02, 2017
1:00 PM EDT
Training Room A
300 Sower Blvd
Frankfort, Kentucky 40601**

1. Call Meeting to Order and Roll Call of Board Members
2. Introduction of Guests
3. Minutes of November, 2016
4. Water Resources Discussion with Colonel Chris Beck, USACE
5. Final Projects Profiles Report
6. Open Discussion for Board Members
7. Public Comment Period
8. Next Meeting

**Water Resources Board
Draft Meeting Minutes
November 28, 2016**

Board Members in Attendance: Earl Bush (County Judge Executives); Steve Coleman (KY Farm Bureau); Lloyd Cress, Jr. (KY League of Cities); John Dix (KRWA); Kevin Jeffries (Soil and Water Conservation Districts); Ryan Quarles (Commissioner Dept. of Agriculture); Kevin Rogers (KY Chamber of Commerce); Charles Snively (EEC Secretary)

Board Members Absent: Dr. Nancy Cox (UK); Jared Carpenter (LRC); Tom McKee (LRC);

Others in Attendance: Brent Burchett (KDA); Biff Baker (GOAP); Jory Becker (DOW); Warren Beeler (GOAP); Joe Cain (KYFB); Bill Caldwell (KDOW); Peter Goodmann (Director DOW); Samantha Kaiser (DOW); Jim Kipp (KWRRI); Gary Larimore (KRWA); Chip Zimmer (DOW)

The meeting began at 1:05 p.m.

Call Meeting to Order and Roll Call of Board Members

Secretary Snively called the meeting to order and led the roll call of Board members.

Introduction of Guests

Guests introduced themselves.

Chip Zimmer gave an update on the drought issues that Kentucky is experiencing. Conditions have continued to decline and most of the state is in a D₂ or D₃. The agricultural community has been hit hard with possible hay shortages and water usage shortage. The future forecast is calling for rain, which will help, but not end the drought.

Commissioner Quarles made the Board aware of Kentucky Department of Agriculture's (KDA) Hay/Forage Sales Directory, <http://www.kyagr.com/buyky/hay-search.aspx>, and the Hay Hotline, <http://www.kyagr.com/marketing/hay-hotline.html>.

Bill Caldwell discussed the La Nina, which is supported by empirical data, in the spring and an early summer drought.

Minutes of October 31, 2016

The meeting minutes from October were approved by consensus.

Review and Ranking of Project Profiles

Mr. Caldwell reviewed the project profile ranking results with the Board. A State Water Plan Initial Project Profile, DOW-1, ranked at the highest priority with the Kentucky Groundwater Observation Network, KGS-1, and the Kentucky Mesonet Station Acquisition and Installation, WKU-1, in second and third place. Only half of the Board members have submitted their rankings.

KENTUCKY WATER RESOURCES MEETING

2 February 2017

Presenter: COL Chris Beck (Louisville Commander)

"The views, opinions and findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."



USACE AUTHORITIES

COL Chris Beck
Commander (Louisville District)



District Boundary Lines



Legend
 Kentucky
 Counties
 Congressional Districts
Corps Districts
 Lexington
 Louisville
 Memphis
 Nashville

Civil Works Business Lines

- Navigation
- Flood and Storm Risk Management
- Aquatic Ecosystem Restoration
- Watershed Planning
- Emergency Management
- Regulatory Program
- Hydropower
- Recreation
- Water Supply



Key Policy & Laws

Flood Control & WRDA

- 1936 FCA – benefits exceed costs (benefit cost ratios)
- 1986 WRDA – cost sharing required for most projects
- 2016 WIIN – Water Infrastructure Improvements for the Nation

Laws, Statutes and Executive Orders

- National Environmental Policy Act
- Clean Water Act
- National Historic Preservation Act
- EO 11988 – Flood Plain Management
- Endangered Species Act



Continuing Authorities Overview

Authority	Description	Per Project Cost Limit (\$M)	Per Program Cost Limit (\$M)
Section 14	Emergency Streambank Stabilization	5	20
Section 107	Navigation	10	50
Section 205	Flood Risk Management	10	55
Section 208	Flood Snagging/Clearing	0.5	7.5
Section 206	Aquatic Ecosystem Restoration	10	40
Section 1135	Ecosystem Restoration	10	25



Other Programs & Authorities

- Planning Assistance to States (Section 22)
Can be used to provide technical or planning assistance on just about ANYTHING
- Flood Plain Management Services Program
- Emergency Management (PL 84-99)
- Environmental Infrastructure (Section 219 & 531)



Kentucky Silver Jackets

- Numerous Agencies
- Meets ~ every 6 weeks
- Share/leverage information resources



Questions?



REGULATORY UPDATE

Lee Anne Devine
Chief, Regulatory (Louisville District)



Regulatory Program Goals & Authorities

- Goals:
 - Protect the Nation's aquatic resources while allowing reasonable development
 - Fair, flexible and balanced decisions
- Authorities:
 - Section 10 of the Rivers and Harbors Act of 1899
 - Regulate structure or work on navigable waters – maintain navigable capacity
 - Section 404 of the Clean Water Act
 - Regulate discharge of dredged or fill material into "waters of the U.S." - maintain physical, chemical and biological integrity of our nation's waters



Regulatory Program Goals & Authorities

- Applications Include: Industrial Developments; Subdivisions; Water and Sewer Infrastructure; "Mom and Pop" Projects; River Facilities; Farming Activities; Roads; Marinas; Coal Mining Proposals, etc.
 - Pre-application Meetings -
 - Discuss alternatives, review process, timelines
 - Investigate qualification for Exemptions
 - Farming Exemptions –
 - Construction/ Maintenance of farm or stock ponds and farm roads; Normal ongoing farming and silvicultural activities
 - Site Visits
 - Determine jurisdiction
 - Public Interest Review
 - Special Conditions - Hours of Operation, Endangered Species, Historic Properties, Mitigation
- Work to get to YES



Our Value to Kentucky

- Partnership with KY Transportation Cabinet (KYTC)
 - Developed a Memorandum of Agreement - Spring 2016
 - Fund 3 Positions through Section 214 of WRDA
 - Focus on Projects and Priorities specified by KYTC
 - More timely decisions
 - Develop better working relationships
- Partnership with Kentucky Department of Fish and Wildlife Resources
 - In Lieu Fee Program - Established in 2002; Updated in 2011
 - One of first across the country that was compliant with the 2008 Mitigation Rule
 - Great asset to the Commonwealth – provides mitigation opportunities for development projects
 - Outstanding partners in mitigation needs across the Commonwealth



Status of Major Initiatives

- Waters of the United States
 - Clean Water Rule – Issued - June 2015/Stay - Oct 2015
 - April 2017 - Supreme Court to hear – District vs Circuit Court Decision
 - Did potentially increase the amount of isolated waters and wetlands that would be jurisdictional
- 2017 Nationwide Permits – Effective March 19, 2017
- Coal Permit Requests
 - Developed a Pre-Application process with KDNR, KDOW, USEPA, USACE, USFWS & OSM
 - Meet early to discuss projects to improve communication and coordination on coal applications
 - Eliminate inconsistent requirements from agencies
 - Fill Placement Optimization Process (FPOP)
 - Engineering process developed to minimize impacts
 - Reps from - KDOW, Environmental Group, Coal Companies, Consultant, KDMP, OSM, USACE
 - State of the Art Process



Questions?



OHIO RIVER BASIN UPDATE

COL Chris Beck
Commander (Louisville District)

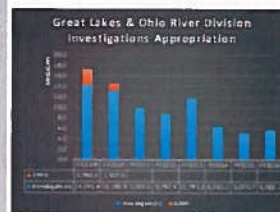
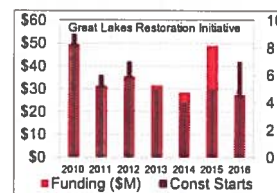


Overview

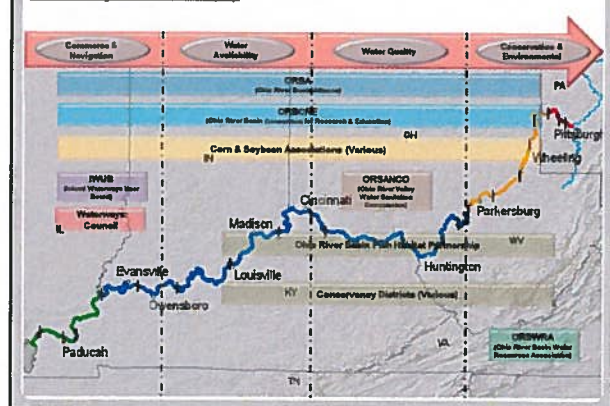
- Sustainability of the Ohio River Basin is a collaborative effort among various partners across 14 states
- Ohio River Basin Comprehensive (ORBC) Plan is intended to provide a strategic plan for prioritizing investments in order to efficiently and effectively address water resource related issues in a holistic manner using a watershed approach
- Ultimate goal is to garner interagency cooperation, establish a shared vision and voice within the Basin, collaboratively forecast future conditions and critical needs, identify opportunities to share and leverage resources, prioritize investments to promote a resilient and sustainable future, and implement timely solutions



Great Lakes Restoration Initiative vs Investigations Funding



Primary Mission(s)



2009 Ohio River Basin Comprehensive Plan

- Collaborative effort between Pittsburgh, Huntington, Louisville, and Nashville Districts and numerous local, State, and Federal stakeholders
- Examination of problems, issues, and opportunities and identification of needs
- Evaluation of existing and future conditions
- Formulation of over 100 solutions and recommended actions (not all Corps-related)
- Evaluation using qualitative measures
- Recommendation of 20 actions with emphasis on four priorities:
 1. Basin-wide water management
 2. Basin-wide investment strategy
 3. Collaborative and cooperative organization within the Basin
 4. Watershed management and investment plans for all sub-basins
- Development of a Programmatic Management Plan guiding investments within the Basin
- Great ideas, good start ---- need to maintain momentum



Basin-Wide Investigations

Completed:

- Ohio River Navigation Dams Rehabilitation Prioritization Study
- Ohio River Basin Climate Change Adaptation/Mitigation Strategies Pilot Study
- Green River Final Watershed Assessment

Ongoing:

Licking River Watershed Final Watershed Assessment

Potential:

- **Base Proposal - ORB Forum and GIS Resource Atlas**
 - Engage Federal and State agencies and others to establish a stakeholder forum and develop a basin-wide digital atlas (GIS/Google Earth type format), a tool to facilitate access to best available government data and natural and human resources information to support government and private sector investment decisions.
- **Option - Risk Assessment and Shared Vision Planning Model for the basin**
 - Collaborative identification of threats and vulnerabilities to basin resources and opportunities for gains in Economic Development and Environmental Quality
 - Collaborative Shared Vision Planning Model for basin to manage risks and compare and prioritize investment opportunities



US Army Corps of Engineers

U.S. Army

Questions?



Civil Works Authorities



Planning Assistance to States was used to assist Metro Parks for the master plan for bicycle access along the Louisville Loop in Louisville, KY.



US Army Corps
of Engineers
Louisville District

General Investigations Studies

Partnering with the Corps of Engineers to Solve Water Resources Problems

The US. Army Corps of Engineers (USACE) is authorized to conduct investigations related to its core mission areas of navigation, flood risk management, and ecosystem restoration, to determine if Congressional authorization and implementation of a specific Civil Works project are warranted.

The Civil Works feasibility study is an initial step in the USACE's process for addressing many of the nation's significant water resources needs. A feasibility study is used to investigate the Federal interest, engineering feasibility, economic justification and environmental acceptability of a recommended water resources project.

The USACE Civil Works Planning Program conducts a broad range of studies, including studies leading to new projects that require Congressional authorization, studies involving evaluation and design of projects under continuing authorities, and reexaminations of existing projects.

After Congress has both authorized and appropriated funds to begin a study, USACE Planners work with a non-federal sponsor (Sponsor) and multi-disciplinary study teams to identify water resources problems, formulate and evaluate solutions, resolve conflicting interests, and prepare recommendations.

The Important Role of the Non-Federal Sponsor

USACE feasibility studies are cost-shared with a Sponsor, reflecting our shared responsibility for the nation's water resources. A Sponsor can be a state, tribe, county, city, town, or any other political

subpart of a state or group of states that has the legal and financial authority and capability to provide the funding and real property requirements needed for a study and a project.

The Sponsor's role begins before a study is initiated, for example, when a local community, or some element of a community, perceives or experiences a water resources problem that is beyond their ability to solve. A community representative, who may represent the possible sponsoring agency, is invited to meet with their local USACE District staff to discuss avenues of assistance, including a feasibility study and potential recommendation for a Federally authorized water resources project.

Before USACE becomes involved in studying a particular water resources problem, two types of Congressional authority are required: study authority and budget appropriations.

In addition to specifically authorized studies, USACE also has numerous programs for which Congress has already provided authorization.

A study authority approves the conduct of an investigation to address the identified problems. Once a study authority is available, budget appropriations to allow for the expenditure of Federal funds for the study can be provided by Congress (usually in the annual Energy and Water Development Appropriations Act). In certain cases, USACE can provide technical assistance or planning assistance through other authorities or projects without further Congressional authorization.

If there is no available study authority, community representatives may contact their Congressional delegation to request a new study authority and may also submit a proposal for Congressional consideration via the Assistant Secretary of the Army's Annual Report to Congress on Future Water Resources Development.

Once an appropriate study authority is available, USACE will follow the normal Federal budgetary process to request Federal funding. Once budget appropriations are available, the study may begin.

What is the Sponsor's Role on the Project Team?

The Sponsor is a study partner and plays many roles during project development. The Sponsor:

- Helps define the water resources problem(s) and opportunities, study scope, tasks, cost estimates and schedules.
- Participates in study decisions, including the type and mix of study objectives, and contributes to the development and evaluation of alternatives and selection of an alternative plan.
- Communicates with the community about study proposals and assists with public communications about a potential project.
- Contributes to project design, including environmental and aesthetic features, and ensures that, to the extent possible, other factors that affect sponsoring communities are addressed during the planning process.

Outline of Steps to Completion of a Civil Works Project:

1. Sponsor Problem Identification
2. Congress Establishes Study Resolution or Authority
3. Congress Appropriates Study Funding
4. Corps/Sponsor Conducts Feasibility Study
5. Administration Review
6. Congressional Authorization of Project
7. Preconstruction, Engineering and Design
8. Congress Appropriates Construction Funding
9. Construction
10. Sponsor Operations, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R)

What are the Sponsor's Obligations?

A Sponsor must contribute 50 percent of feasibility study costs plus 25-35 percent of Preconstruction, Engineering and Design (PED) costs. The Sponsor and USACE sign three agreements over the course of the project development and construction:

- The Feasibility Cost Sharing Agreement (FCSA) must be signed before the feasibility study can begin. A model FCSA for a \$3 million total study cost, signed by the Sponsor and

USACE at the beginning of a study, may be amended if the study's scope and complexity justifies a higher total cost level. The Sponsor may provide a percentage of the cost-share requirement through work-in-kind (amounts vary based on program authority); some program authorities may require a minimum cash contribution.

- The Design Agreement covers additional PED activities to prepare plans and specifications for construction of a project, after completion of a final feasibility study report that recommends implementation of a specific water resources project.
- The Project Partnership Agreement (PPA) between the Sponsor and USACE covers construction activities once the project has been authorized by Congress and Construction funding has been appropriated.

In addition to the legal and financial capability to fulfill the cost sharing and local cooperation requirements, the Sponsor also agrees to:

- Provide, without cost to the Federal Government, all lands, easements, rights-of-way, relocations and disposal areas (LERRD) necessary for construction, and OMRR&R of a project, including all necessary access routes and utility relocations. The Sponsor cost share for a project includes eligible LERRD credit and cash contributions.
- Comply with provisions of pertinent Federal laws (e.g., National Environmental Policy Act, Endangered Species Act, Clean Water Act, etc.)
- Once the project is completed, it must be maintained and operated without cost to the Federal Government.

Floodplain Management Services Program

What the US Army Corps of Engineers Can Do

The Floodplain Management Services (FPMS) Program provides the full range of technical services and planning guidance that is needed to support effective floodplain management.

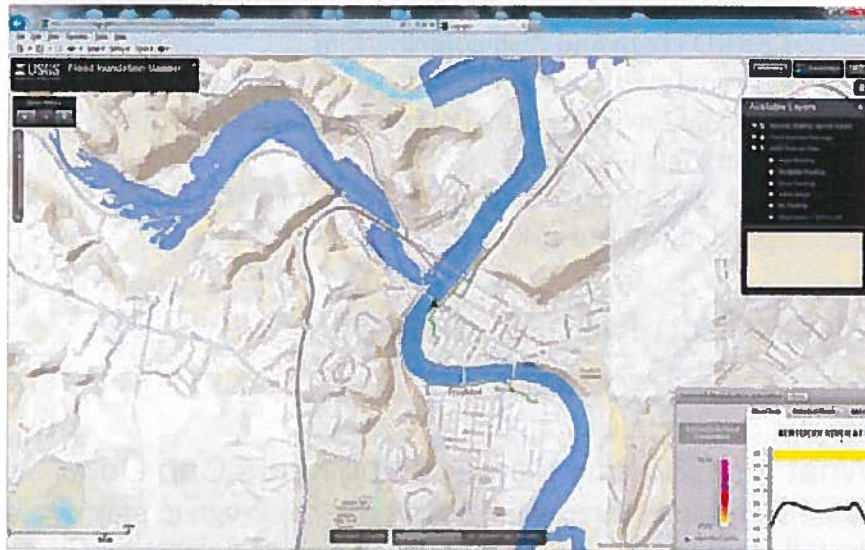
Types of Assistance

General Technical Services:

The Program Develops or interprets site-specific data on flooding issues. It also provides information on natural or cultural floodplain resources before and after the use of floodplain management measures

General Planning Guidance:

On a larger scale, the program provides assistance and guidance in the form of “Special Studies” on all aspects of floodplain management planning, including the possible impacts of off-floodplain land use changes on the physical, socio-economic, and environmental conditions of the floodplain. Special Studies are accomplished at 100% Federal cost. However, funding for these studies is very limited and competitive. See the next page for a chart outlining the different floodplain management services we offer. The program also provides guidance and assistance for meeting standards of the National Flood Insurance Program and for conducting workshops and seminars on nonstructural floodplain management



Flood inundation mapping efforts can be undertaken under the Floodplain Management Services Program.

measures, such as flood proofing and relocation of structures from the floodplain.

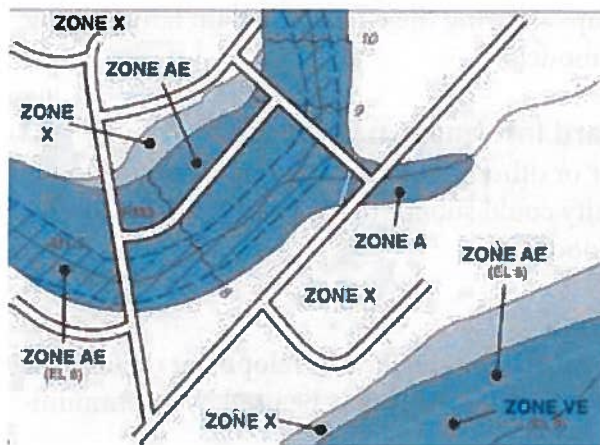
Guides, Pamphlets, and Supporting Studies:

Studies are conducted under the program to improve the methods and procedures for mitigating flood damages. Guides and pamphlets also are prepared on flood proofing techniques, floodplain regulation, floodplain occupancy, natural floodplain resources, and other related aspects of floodplain management

Cost Sharing Information

Program services are provided to state and local governments, other non-Federal public agencies without charge based on available funding. Voluntary contribution of funds by States, Local Governments, and Native American Tribes for the purposes of expanding the scope of services requested under Floodplain Management Services is also allowed.

Program services also are offered to non-water resource Federal agencies and to the private sector on a 100-percent cost recovery basis. For most of these requests, payment is required before ser-



vices are provided. A schedule of charges is used to recover the cost of services taking up to one day to provide. Letter requests or signed agreements are used to charge for those that take longer.

Existing floodplain maps, including Flood Insurance Rate Maps can be reviewed and analyzed under the Floodplain Management Services Program.

Floodplain Management Services Offered

Flood Damage Mitigation Study

A study of flooding problems within a community with recommendations of measures to alleviate flooding or reduce damages.

Elevation Reference Mark Database

This could include reference elevations for community planning purposes or for use by individuals.

Flood Warning or Preparedness Study

This may include a report or the design of a warning system and emergency evacuation plan based on river stages and rates of rise.

Flood Control Planning Database

A state-wide inventory of all flood control structures and specific information about each.

Stormwater Management Study

Analysis of flooding problems caused by inadequate stormwater drainage and recommend improvements. Dam Failure Analysis Model and prepare maps showing the effects of a dam failure using a 3-dimensional flow model.

Special Flood Hazard Information Report

Delineate the 100-year or other frequency floodplain and/or floodway. A local community could submit this report to FEMA to extend or revise FIS floodplains.

Urbanization Analysis

This could look at the effects of watershed development on flood flows and floodplain boundaries. This may be used by a community to set development policy.

GIS Floodplain Maps

Mapping of floodplains using Geographic Information System.

HEC-1 and HEC-2 Workshops

Conduct Workshops on HEC-1 (hydrologic) and HEC-2 (stream profile) computer models.

Floodplain Delineation/Inundation Maps

Showing areas flooded at various river stages. This could be used for emergency planning or to set floodplain development policies.

Floodproofing Workshops

Conduct workshops on floodproofing methods for existing buildings located in floodplains.

Community Flood Zone Database:

This could contain flood zone information of properties and structures located within designated floodplains.

Community Rating System Support

Assistance in qualifying for and preparing applications for FEMA's Community Rating System. This may include several of the above items as well as design of floodproofing for repetitive loss structures.

Emergency Streambank and Shoreline Stabilization Section 14, 1946 Flood Control Act**What the US Army Corps of Engineers Can Do**

The US Army Corps of Engineers is authorized to construct bank protection works to protect vital public facilities that are being threatened by streambank erosion. Some examples of the types of facilities that are eligible for protection are public buildings, roads, sewage treatment plants, municipal water supply systems, non-profit schools and hospitals, bridges, etc. Private property, facilities, or vacant lands are NOT eligible for protection under this authority. In addition the erosion protection must be more cost effective than relocating the facility.

Study Process

Before the Federal Government can participate in implementing a flood risk management project, a planning study must be conducted to determine if the project is economically justified (benefits exceed the costs), technically feasible, and environmentally acceptable.

Cost Sharing Information

Initial study is 100% federally funded up to \$100,000. The remainder of the study phase is cost shared 50% Federal and 50% non-Federal. The sponsor must contribute 35 percent of the total project design and construction cost as cash, in-kind services or Lands, Easements, Rights-of-way, Relocations, and Dis-

posal areas (LERRDs). Each project is limited to a Federal Cost of no more than \$5 million. The national program limit for these projects is \$20 million per year.

Project Sponsor Responsibility

A Feasibility Cost Sharing Agreement (FCSA) must be executed for studies in excess of \$100,000. Formal assurance in the form of a Project Partnership Agreement must be executed with the project sponsor. The Corps of Engineers would oversee project construc-



Pre-Project Condition



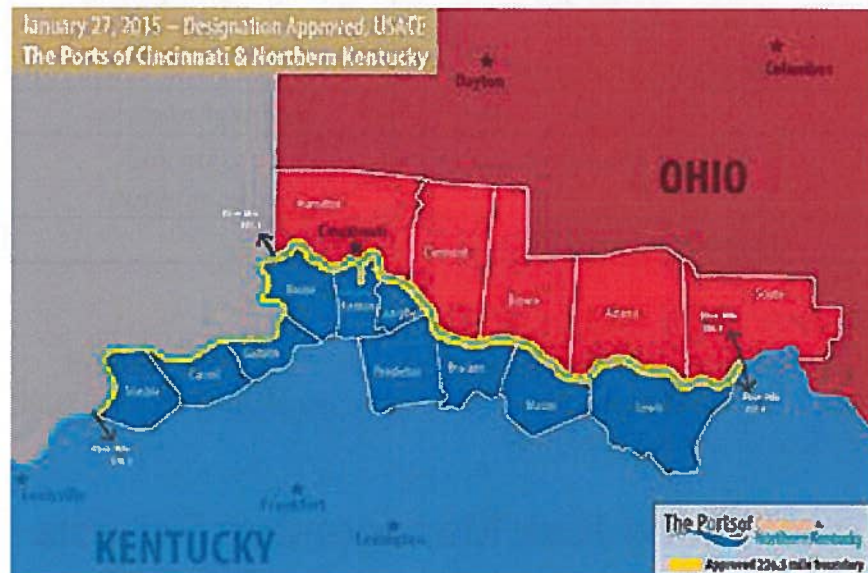
Post-Project Condition

tion; however, once constructed, the operation and maintenance of the project would be the responsibility of the project sponsor.

Planning Assistance to States Section 22, 1974 Flood Control Act

What the US Army Corps of Engineers Can Do

Every year, each State, local government, or other non-Federal entity can provide the Corps of Engineers its request for studies under the program, and the Corps of Engineers then accommodates as many studies as possible within the funding allotment. Typical studies are only planning level of detail; they do not include detailed design for project construction. The studies generally involve analysis of existing data for planning purposes, using standard engineering techniques, although some data collection is often necessary. Most studies become the basis for State, and local planning



Planning Assistance to States was used for a statistical boundary redesignation for the Port of Cincinnati to encompass facilities along the Ohio River in Ohio and Kentucky.

decisions. Congress funds the Planning Assistance to States (PAS) Program annually. Federal allotments for each State or Tribe from the nationwide appropriation are limited to \$5 million annually, but typically are much less. Individual studies, of which there may be more than one per state each year, generally range in cost from \$35,000 to over \$100,000.

Study Process

Typical Studies encompass many types of studies dealing with water and related land resources issues. Types of studies conducted in recent years under the program include the following:

Water Supply and Demand Water Quality	Navigation
Environmental Conservation and/or Restoration	Recreational Master Planning
Dam Safety	GIS Development
Flood Risk and/or Floodplain Management	Engineering Analysis
Land Use	Drainage analysis
Master Planning	Erosion and Sedimentation
Brownfield Assessment	

Cost Sharing Information

PAS Studies are cost shared on a 50% Federal, 50% non-Federal basis. The non-Federal cost share may be made up of cash, in-kind services, or a mixture of both.

Small Flood Risk Management Projects Section 205, 1948 Flood Control Act

What the U.S. Army Corps of Engineers Can Do

The Small Flood Risk Management Project program provides local flood risk management by the construction or site specific. Typical

flood risk management projects may include levees, floodwalls, impoundments, pumping stations, and channel modifications as well as non-structural measures. Non-structural measures reduce flood damages by changing the use of floodplains or by accommodating existing uses to the flood hazard. Examples include flood proofing, relocation of structures, and flood warning



and preparedness systems. The US Army Corps of Engineers oversees planning, design, and construction of flood risk management projects in close coordination with the project sponsor.

The Feather Creek Project in Clinton, Indiana reaped benefits before project completion as seen in the top photograph.

Study Process

Before the Federal Government can participate in implementing a flood risk management project, a planning study must be conducted to determine if the project is economically justified (benefits exceed the costs), technically feasible, and environmentally acceptable.

Cost Sharing Information

Initial study is 100% federally funded up to \$100,000. The remainder of the study phase is cost shared 50% Federal and 50% non-Federal. The sponsor must contribute 35 percent (minimum 5 percent cash) of the total project design and construction cost as cash, in-kind services or Lands, Easements, Rights-of-way, Relocations, and Disposal areas (LERRDs). Each project is limited to a Federal Cost of no more than \$10 million. The national program limit for these projects is \$55 million per year.

Project Sponsor Responsibility

A Feasibility Cost Sharing Agreement (FCSA) must be executed for studies in excess of \$100,000. Formal assurance in the form of a Project Partnership Agreement must be executed with the project sponsor. The Corps of Engineers would oversee project construction; however, once constructed, the operation and maintenance of the project would be the responsibility of the project sponsor.

Aquatic Ecosystem Restoration Section 206, 1996 Water Resources Development Act

What the US Army Corps of Engineers Can Do

Section 206 of the 1996 Water Resources Development Act allows the US Army Corps of Engineers to carry out aquatic ecosystem restoration and protection projects. Projects typically involve environmental restoration of aquatic and floodplain areas including creation/restoration of wetlands and riparian areas, as well as small dam removal. Other types of projects include providing water management, planting of hardwood trees or native grasses, and other types of restoration to improve and enrich aquatic habitat. Limited recreational features can also be included in the project, provided they are compatible with the ecosystems outputs of the project.



Pre-Project Condition



Post-Project Condition

Study Process

Before the Federal Government can participate in implementing Section 206 project, a planning study must be conducted to determine if the project is economically justified (benefits exceed the costs), technically feasible, and environmentally acceptable.

Cost Sharing Information

Initial study is 100% federally funded up to \$100,000. The remainder of the study phase is cost shared 50% Federal and 50% non-Federal. The design and implementation of the project are cost shared on a 65% federal, 35% non-Federal basis. The non-Federal portion may be made up of a mixture of cash, in-kind contri-

butions, and Lands, Easements, Rights-of-way, Relocations, and Disposal areas (LERRDs). Each project is limited to a Federal Cost of no more than \$10 million, and the national program limit for these projects is \$40 million per year.

Project Sponsor Responsibility

The local sponsor is responsible for provision of the LERRDs necessary for the project. A Feasibility Cost Sharing Agreement (FCSA) must be executed for studies in excess of \$100,000. Formal assurance in the form of a Project Partnership Agreement must be executed with the project sponsor. The Corps of Engineers would oversee project construction; however, once constructed, the operation and maintenance of the project would be the responsibility of the project sponsor.

Project Modification for Improvements to the Environment Section 1135, 1986 Water Resources Development Act

What the US Army Corps of Engineers Can Do

This authority provides for the review and modification of structures and operations of water resources projects constructed by the Corps for the purpose of improving the quality of the environment when it is determined that such modifications are feasible, consistent with the authorized project purposes, and will improve the quality of the environment in the public interest. In addition, if it is determined that a Corps water resources project has contributed to the degradation of the quality of the environment, restoration measures may be implemented at the project site or at other locations that have been affected by the construction or operation of the project, if such measures do not conflict with the authorized project purposes.

Study Process

Before the Federal Government can participate in implementing Section 1135 project, a planning study must be conducted to de-

termine if the project is economically justified (benefits exceed the costs), technically feasible, and environmentally acceptable.

Cost Sharing Information

Initial study is 100% federally funded up to \$100,000. The remainder of the study phase is cost shared 50% Federal and 50% non-Federal. The design and implementation of the project are cost shared on a 75% federal, 25% non-Federal basis. The non-Federal portion may be made up of a mixture of cash, in-kind contributions, and Lands, Easements, Rights-of-way, Relocations, and Disposal areas (LERRDs). Each project is limited to a Federal Cost of no more than \$10,000,000, and the national program limit for these projects is \$25,000,000 per year.

Project Sponsor Responsibility

The local sponsor is responsible for provision of the LERRDs necessary for the project. A Feasibility Cost Sharing Agreement (FCSA) must be executed for studies in excess of \$100,000. Formal assurance in the form of a Project Partnership Agreement must be executed with the project sponsor. The Corps of Engineers would oversee project construction; however, once constructed, the operation and maintenance of the project would be the responsibility of the project sponsor.



Civil Works Authorities at a

Authority	Description
Section 14	Emergency Streambank Stabilization
Section 107	Navigation
Section 205	Flood Risk Management
Section 208	Flood Snagging/Clearing
Section 206	Aquatic Ecosystem Restoration
Section 1135	Ecosystem Restoration

Unless otherwise noted, cost sharing is 65% federal, 35% non-federal.

- Section 14 – Emergency erosion protection for public facilities and utilities (roads, bridges, sewers, schools, etc.)
- Section 107 – Small navigation projects (boat harbors, etc.). Cost sharing varies.
- Section 205 – Small flood risk management projects (levees, floodwalls, channel widening, etc.)
- Section 208 – Clearing and snagging for flood risk management (logjam removal)
- Section 206 – Aquatic environmental restoration (wetland creation, stream restoration, etc.)
- Section 1135 – Modifications of Corps projects for ecosystem restoration purposes. 75/25 cost share.

Glance:

Per Project Cost Limit (\$M)	Per Program Cost Limit (\$M)
5	20
10	50
10	55
0.5	7.5
10	40
10	25



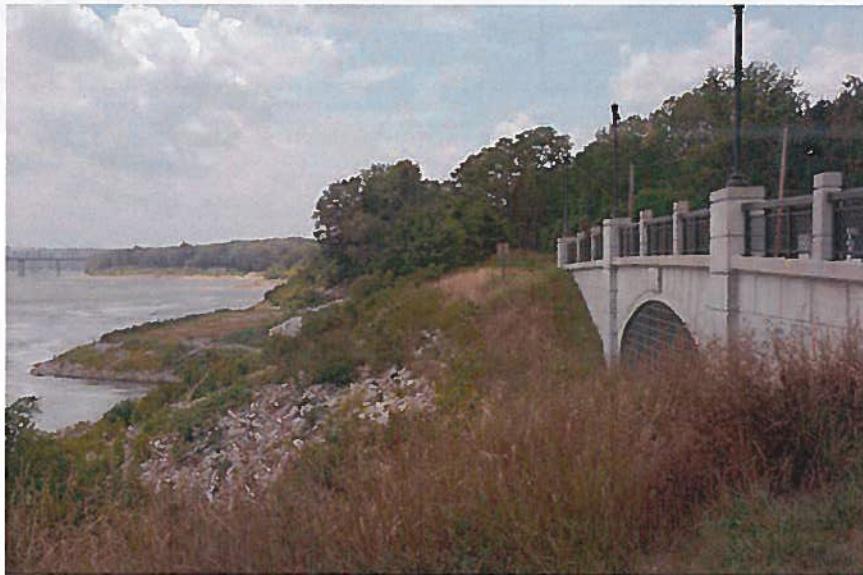
Partnering agency members discuss Aquatic Ecosystem Restoration in the Green River area.

Requesting Assistance and Information

An investigation of a prospective project under any of the civil works authorities can be initiated upon receipt of a request from a sponsoring agency empowered under State law to provide local partnership.

For additional information:

Brandon R. Brummett, P.E., PMP
US Army Corps of Engineers Louisville District
Outreach Coordinator
502-315-6883
brandon.r.brummett@usace.army.mil



This streambank protection project along the Ohio River at Mill Creek is an example of Emergency Streambank stabilization under Section 14.



Kentucky Farm Bureau Water Management Work Group

Recommendations for Consideration

The Work Group feels these recommendations should be prioritized and coordinated to ensure water issues are undertaken in a productive and well-timed manner, understanding all are important and funding opportunities may influence timing of successful implementation.

1. Monitoring:

- A. Monitoring and tracking of water resources – surface water, aquifer, springs, ponds, and lakes.
 - I. Continued support and funding for the Data Management and Integration Portal for water resources data maintained by KY USGS.
 - II. Support development of additional “super gauges” for water quality monitoring on KY and Salt Rivers by USGS as part of Kentucky’s nutrient reduction strategy.
- B. Develop a statewide water resources network for comprehensive monitoring of water resources. Coordinate the location of future sites, both surface and groundwater, in relation to existing and new monitoring sites.
 - I. Continued support to expand the KY Groundwater Monitoring Network by KGS.
 - a. Secure funding for additional monitor wells, data-collection equipment and operational costs.
- C. Develop an “early warning system” of low soil moisture and drought conditions that impact farming and identify any viable system that can be useful to producers.
- D. Continued expansion of the 66 Kentucky Mesonet sites into more counties and across state boundaries that impact Kentucky weather events.
 - I. Connect groundwater monitoring data and Kentucky Mesonet data into an effective water budget by county or region (similar to Pennsylvania system).
 - II. Evaluate the need for additional scientific instrumentation to enhance value of data collected from Mesonet sites.
 - III. Development of a phone app (similar to Oklahoma) with Mesonet data.
 - IV. Explore possibility of project funding for Mesonet sites in communities that may not have the resources to support a critical site. Support continued efforts of the Kentucky Ag Development funds to expand the Mesonet Network. (Possibly matching local funds with Kentucky Ag Development funds).
- E. Continued expansion beyond the ten Mesonet stations that have soil moisture and soil temperature sensors.
- F. Support adequate funding for Kentucky Mesonet operational cost.
- G. Identify better, more comprehensive ways to track, monitor, and report early onset of low soil moisture conditions to augment the computerized models that provide the soil moisture conditions in specific regions across Kentucky.

- H. (Development of Regional Water Budget Model – Sensor Wise Irrigation Monitoring (SWIM) Network).

2. Analysis of Water Use and Information Needs:

- A. Develop an accurate determination of water use for crop and livestock production on municipal systems.
- B. Support comprehensive rural water system source assessment, diversification and planning to determine capacities of rural water systems and assess their vulnerabilities during low flow or drought events.
- C. Project future needs or potential increases in agricultural water uses for expanded crop opportunities.
- D. Identify potential conflicts and resolutions of water use between users upstream and downstream, nearby domestic or public supplies, recreational, and industrial uses.
- E. Review and make recommendations to improve water laws, policies and drought plans. (Water Jurisdiction Issues)
- F. Understand the capacity of rural and urban water supplies and their vulnerability during low water flow or drought conditions to meet demand.
- G. Increase public awareness of the importance of our water resources to our agricultural production capacity and to our economic development potential.
- H. Develop a survey to explore what type of information the farming community finds useful relative to weather and water use understanding producers may have different informational needs at different times of the year.
- I. Encourage local citizen, landowners, and agriculture producers to participate in local "Source Water Protection Programs."

3. Water Resource Development and Technical Assistance:

- A. Develop and/or improve best management practices to improve water efficiency (increase technical assistance from multiple agencies).
 - I. Explore and support research into crop breeding programs to enhance development of major crop varieties that are more water-use efficient.
 - II. Promote soil health practices to increase water holding capacity and the importance of organic matter relative to water resource management.
 - III. Coordinate efforts to define and plan research and demonstration irrigation projects at the UK Grain & Forage Center for Excellence.
 - a. Irrigation efficiency assistance (similar to energy efficiency programs currently available), drip irrigation or irrigation injection system development.
 - b. Development of effective water trapping, harvesting or alternative water storage systems (retrofitting tile drainage systems, backflow systems, etc.)
 - IV. Develop surface water resources to capture water during winter and spring months for use during drought – runoff water to be recycled back to irrigate crops.

- V. Retrofitting tile drainage to possibly capture runoff water to be recycled as an irrigation resource. Identify and enhance all BMPs for their water management benefits.
- VI. Identify funding for demonstration pilot projects or practices on innovative water management practices to trap, hold and better utilize water on the farm.
- B. Explore infrastructure improvements at some of the roughly 200 P.L. 566 and State Owned Dams to provide pumping stations and greater access during state drought declarations.
- C. Increase access to technical expertise assistance and funding in water development for farm use.
 - I. Evaluate changes to Agricultural Development Fund, state cost share programs and CAIP projects to allow funding for new and innovative water resource development projects. Support continued efforts in CAIP to assist individual producers demonstrate water efficiencies and recommend establishment of a new state level program specifically for water management assistance.
 - II. Work with Congressional delegation on farm bill proposals to address changes needed to allow technical assistance in the initial development of water resources to demonstrate on-farm water resource development.
 - a. Allow NRCS to provide financial assistance through EQIP for the "best" alternative (vs. least-cost) for the identified resource concern. Develop criteria for determining "best" and sustainable alternative water source.
 - b. Allow NRCS to provide financial assistance through EQIP for new irrigation systems providing that parameters are developed, such as:
 - i. Consistent drought locations (number of years in documented drought status)
 - ii. Cap on dollars
 - iii. State or area must have baseline aquifer data available
 - iv. Require collection and usage reports to avoid aquifer drawdown or depletion
- D. Developing "water harvesting" technologies and/or best management practices to enhance water management and evaluate initial installation costs. Support continued programs that enhance on-farm water storage, assist with water development, and assist during droughts with pond clean-out like ECP.
- E. Establish an "Agricultural Water Resources Development Academy."

4. Drought Mitigation Plan and Response:

- A. Update the KY Drought Mitigation Plan and fund development of the NOAA Drought Early Warning System for Kentucky as part of that plan update.

- B. Strengthen the agriculture section of the Drought Mitigation Plan and expand on those things envisioned in the Plan.
 - I. Two main elements, the monitoring/response and the mitigation/risk reduction.
 - II. Baseline forecasting for future water needs and where Kentucky wants to be relative to water resources.
- C. Familiarize agencies with their roles as identified in the Drought Mitigation Plan.
- D. Document these conditions to appropriate USDA and state agencies to ensure timely emergency declarations and assistance.
- E. Define the specific problems that are most often encountered during drought and recommend viable solutions.
- F. Identify multiple ways that agriculture drought preparedness/response could be improved from impact assessments, climate/soil monitoring, financial assistance, on-farm water management projects etc. (a good plan has to have additional input and be organized and prioritized).
- G. Reduce financial impact of drought on agriculture- Corn crop yields varied from 68 bu/ac to 170 bu/ac over the past 15 years according to NASS. At \$4/bu that is a spread of \$408/a. variance.

5. Communications & Outreach:

- A. Assist public water systems with community drought preparation planning and source water protection programs.
- B. Develop effective proactive communication and outreach campaigns to educate water users about the urban/rural interface and how water resources would be impacted under serious drought conditions.
 - I. Promote the current effort to identify and develop additional water resources that will complement municipal and rural water resources.
 - II. Address the importance of agriculture and define how agriculture's water needs would be addressed under various drought scenarios.
 - III. Develop and communicate water-use conservation recommendations that both urban and rural water users can utilize.
- C. Encourage development of a Kentucky comprehensive water management plan.

6. Water Resources Development Act

- A. Utilize authorizations passed by Congress in the Water Resources Development Act of 2016 (WRDA) to enhance water resources in Kentucky.

February 2, 2017

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Water Resources Board Meeting
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February 2, 2017

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